

THW

THORPE
NORTH &
WESTERN L.L.P.
SINCE 1979
THE TEAM APPROACH TO PREMIER PERFORMANCE ®

INTELLECTUAL PROPERTY LAW

PATENTS, TRADEMARKS,

COPYRIGHTS, UNFAIR

COMPETITION, TRADE SECRETS,

LITIGATION, DISPUTE RESOLUTION

AND RELATED MATTERS



SALT LAKE AREA OFFICE
8180 SOUTH 700 EAST, SUITE 200
SANDY, UTAH 84070-0562
801.566.6633
801.566.0750 FAX
PATLAW@TNW.COM
WWW.TNW.COM

U.S. MAILING ADDRESS
P.O. Box 1219
SANDY, UTAH 84091-1219

LAS VEGAS AREA OFFICE
OF COUNSEL: NEIL J. BELLER †
7408 WEST SAHARA
LAS VEGAS, NEVADA 89117
702.368.7767
† ADMITTED IN NEVADA

VAUGHN W. NORTH
M. WAYNE WESTERN
GARRON M. HOBSON
PETER M. DE JONGE
CLIFTON W. THOMPSON
STEVE M. PERRY
WEILI CHENG, PH.D.
DAVID R. MCKINNEY, PE.
GARY P. OAKESON
DAVID W. OSBORNE
DAVID L. STOTT
JASON R. JONES
PAUL C. OESTREICH, M.S.
ERIK S. ERICKSEN, M.S.
REGISTERED PATENT ATTORNEYS
NATHAN S. WINESETT
OF COUNSEL
BRYAN K. HANKS
PATENT AGENT
ALEX HAYMOND, B.S. EE
TODD B. ALDER, PH.D.
JONATHAN M. BENNS, PH.D.
AARON M. SMITH, B.S. EE
WILLIAM T. RALSTON, PH.D. EE
TECHNICAL CONSULTANTS
CALVIN E. THORPE
(1938-1999)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Re: U.S. Patent Application No. 10/775,543, Filed 2/9/04
Inventor(s): Chien-Min Sung
**DIAMOND COMPOSITE HEAT SPREADER HAVING THERMAL
CONDUCTIVITY GRADIENTS AND ASSOCIATED METHODS**
Attorney Docket No. 21154.CIP2

Dear Sir/Madam:

Transmitted herewith for filing and pursuant to 37 C.F.R. §§ 1.56 and 1.97 is an Information Disclosure Statement.

Enclosed also are the following designated documents, as required under 37 C.F.R. §§ 1.97 and 1.98:

- ☒ Form PTO-1449 list of 43 (forty-three) reference(s) submitted for consideration.
- ☐ Legible copies of all the listed references or their relevant portions.
- ☒ Legible copies of the listed non-patent documents and foreign documents or their relevant portions are included.
- ☒ Copies of U.S. patents and/or publications are not included pursuant to the Official Gazette Notice, dated Aug. 5, 2003, waiving the requirement of 37 C.F.R. 1.98(a)(2)(i).

- ☐ All English translations of each non-English reference, if any, within the possession, custody, control or availability of anyone designated in 37 C.F.R. § 1.56(c) (see 37 C.F.R. § 1.98(c)).

The following are included within the Information Disclosure Statement if applicable and as required under 37 C.F.R. § 1.98:

- ☐ Concise explanation of relevance of each reference not in English and unaccompanied by an English translation.
- ☐ Statement that certain listed references not enclosed are substantially cumulative of an enclosed reference.
- ☐ Statement that certain listed references not enclosed were previously cited by or submitted to the Office in the identified prior application which is relied upon for an earlier filing date under 35 U.S.C. § 120.

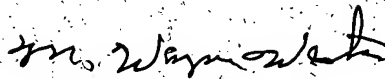
In order to secure consideration of the items designated above, one or more of the following, if required, is also enclosed:

- ☐ Statement under 37 C.F.R. § 1.97(e)(1) or (2).
- ☐ Check No. _____ in the amount of \$180.00 (amount in § 1.17(p)) constituting the submission fee set forth in 37 C.F.R. § 1.17(p).

In the event that 37 C.F.R. § 1.97(c) applies and the Examiner is not satisfied that the Statement meets the requirements of 37 C.F.R. § 1.97(e), or in any other event remediable by a fee, please credit any over payment or charge any additional fees to Deposit Account No. 20-0100 of the undersigned.

Dated this 7 day of May, 2004.

Respectfully submitted,



M. Wayne Western
Attorney for Applicant
Registration No. 22,788

THORPE NORTH & WESTERN, LLP
Customer No. 20,551
P.O. Box 1219
Sandy, Utah 84091-1219
Telephone: (801) 566-6633



MWW/DWO/ESE/em
Enclosures

IN THE UNITED STATES PATENT & TRADEMARKS OFFICE



APPLICANT: Chien-Min Sung
SERIAL NO.: 10/775,543
FILED: 2/9/04
FOR: DIAMOND COMPOSITE HEAT
SPREADER HAVING THERMAL
CONDUCTIVITY GRADIENTS AND
ASSOCIATED METHODS
ATTORNEY DOCKET NO. 21154.CIP2

INFORMATION DISCLOSURE
STATEMENT UNDER
37 C.F.R. § 1.97

CERTIFICATE OF MAILING
UNDER 37 C.F.R. § 1.8

DATE OF DEPOSIT: 5/7/04

I hereby certify that this paper or fee (along with any paper or fee referred to as being attached or enclosed) is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Emily Mechem
Emily Mechem

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir/Madam:

Please find, pursuant to 37 C.F.R. § 1.98(a)(1), the enclosed Form PTO-1449 which contains a list of all patents, publications, or other items that have come to the attention of one or more of the individuals designated in 37 C.F.R. § 1.56(c). Applicant respectfully submits that this Information Disclosure Statement is filed pursuant to:

☒ 37 C.F.R. § 1.97 (b)(1) or (3), within three months of the filing date of the application, or before a first office action on the merits, whichever occurs last;

☐ 37 C.F.R. § 1.97 (c), after a first office action on the merits, but before a Final Office Action or a Notice of Allowance, whichever occurs first, and is accompanied by either 1) a statement in accordance with 37 C.F.R. § 1.97(e), or 2) the fee set forth in § 1.17(p); or

☐ 37 C.F.R. § 1.97 (d), after a Final Office Action or Notice of Allowance, whichever occurs first, but on or before payment of the issue fee, and is accompanied by both 1) a statement in accordance with 37 C.F.R. § 1.97(e), and 2) the fee set forth in § 1.17(p).

While no representation is made that any of these references may be "prior art" within the meaning of that term in accordance with 35 U.S.C. §§ 102 or 103, the enclosed list of references is disclosed so as to comply with the duty of disclosure set forth in 37 C.F.R. § 1.56.



Moreover, while no representation is made that a specific search of office files or patent office records has been conducted or that no better art exists, the undersigned attorney of record believes that the references listed, together with any other references which may have been previously submitted or listed, are the closest to the claimed invention (taken in its entirety) of which the undersigned is presently aware, and no art which is closer to the claimed invention (taken in its entirety) has been knowingly withheld.

☐ In accordance with 37 C.F.R. §§ 1.97 and 1.98, a copy of each listed reference (or relevant portion thereof) which was not previously submitted to, or cited by, the Patent Office is also enclosed.

☒ Legible copies of any listed non-patent literature and foreign documents or their relevant portions. Copies of U.S. patents and/or publications are NOT included pursuant to the Official Gazette Notice, dated Aug. 5, 2003, waiving the requirement of 37 C.F.R. 1.98(a)(2)(i).

☐ The references listed in the accompanying Form PTO-1449 are NOT enclosed because, under 37 C.F.R. § 1.98(d), they were previously cited by or submitted to the Office in application number _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120.

For all listed references that are not either in the English language, or accompanied by a translation into English, a concise explanation of relevance as required under 37 C.F.R. § 1.98(a)(3) is enclosed attached to each.

Please charge any additional fees or credit any overpayment to Deposit Account No. 20-0100.

Dated this 7th day of May, 2004.

Respectfully submitted,

M. Wayne Western
Attorney for Applicant
Registration No. 22,788

THORPE NORTH & WESTERN, LLP
Customer No. 20,551
P.O. Box 1219
Sandy, Utah 84091-1219
Telephone: (801) 566-6633

MWW/DWC/ESE/em



PTO-1449

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.
21154.CIP2SERIAL NO.
10/775,543

LIST OF PRIOR ART CITED BY APPLICANT

APPLICANT Chien-Min Sung

FILING DATE
2/9/04

GROUP

U.S. PATENT DOCUMENTS

EXAMINER INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	A1	2002/0023733	02-28-02	Hall et al.			
	A2	1,382,080	01-29-75	Vereschagin et al.			
	A3	3,574,580	04-13-71	Stromberg et al.			
	A4	3,678,995	07-25-72	Collard			
	A5	3,828,848	08-13-74	Custers et al.			
	A6	3,872,496	03-18-75	Potter			
	A7	3,912,500	10-14-75	Vereschagin et al.			
	A8	3,913,280	10-21-75	Hall			
	A9	3,949,263	04-06-76	Harper			
	A10	4,231,195	11-04-80	DeVries et al.			
	A11	4,576,224	03-18-86	Eaton et al.			
	A12	4,649,992	03-17-87	Geen et al.			
	A13	4,948,388	08-14-90	Ringwood			
	A14	5,070,936	12-10-91	Carroll et al.			
	A15	5,120,495	06-09-92	Supan et al.			
	A16	5,130,771	07-14-92	Burnham et al.			
	A17	5,382,314	01-17-95	Jin			
	A18	5,614,320	03/25/1997	Beane et al.			
	A19	5,642,779	07-01-97	Yamamoto et al.			
	A20	5,696,665	12-09-97	Nagy			
	A21	5,719,441	02-17-98	Larimer			
	A22	5,719,441	02-17-98	Larimer			
	A23	5,783,316	07-21-98	Colella et al.			
	A24	5,786,075	07-28-98	Mishuku et al.			
	A25	5,895,972	04-20-99	Paniccia			
	A26	6,031,285	02-29-00	Nishibayashi			
	A27	6,167,948	01-02-01	Thomas			
	A28	6,238,454	05-29-01	Polese et al.			

PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 21154.CIP2	SERIAL NO. 10/775,543
		APPLICANT Chien-Min Sung	
		FILING DATE 2/9/04	GROUP

LIST OF PRIOR ART CITED BY APPLICANT

EXAMINER INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	A29	6,264,882	07-24-01	Colella et al.			
	A30	6,270,848	08-07-01	Nishibayashi			
	A31	6,335,863 B1	01-01-02	Yamamoto et al.			
	A32	6,337,513 B1	01-08-02	Clevenger et al.			
	A33	6,361,857	03-26-02	Saito et al.			
	A34	6,390,181	05-21-02	Hall et al.			
	A35	6,413,589	07-02-02	Li			
	A36	6,448,642	09-10-02	Bewley et al.			
	A37	6,448,642	09-10-02	Bewley et al.			
	A38	6,517,221	02-11-03	Xie			
	A39	6,538,892	03-25-03	Smalc			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIALS		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES NO

OTHER PRIOR ART (Including Author, Title, Pertinent Pages, Etc.)

	A40	Horton, M. D., B. J. Pope and H. T. Hall, "Sintered Diamond," INTERNATIONAL INDUSTRIAL DIAMOND ASSOCIATION SYMPOSIUM, WASHINGTON, D. C. (1974).
	A41	Pope, B. J., M. D. Horton, H. T. Hall, L. S. Bowman and H. Adaniya, "Sintered Diamond: Its Possible Use as a High Thermal Conductivity Semiconduction Device Substrate," PROC. 4TH INTERNATIONAL CONFERENCE ON HIGH PRESSURE (AIRAPT), Kyoto, Japan (1974).
	A42	Hall, H. Tracy, "Sintered Diamonds," SCIENCE, Vol 169, August 28, 1970.
	A43	Materials Science & Engineering B41 (1996) 261-266 Fabrication & characterization of diamond/copper composites for thermal management substrate applications.

EXAMINER

DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication with applicant.